



Westford Limited Air Quality Monitoring

GZA GeoEnvironmental, Inc

October 19, 2020



Known for excellence. Built on trust.

Scope of Work

- Conduct air quality monitoring and testing at 5 designated sample locations, selected by Westford.
- Conduct two air quality monitoring and testing events, one during before construction and during typical operation.
 - Pre Construction May 2019
 - Post Construction September 2020
- Evaluate concentrations of volatile organic compounds (VOCs), particulate matter, lead, and asphalt fume.



Sampling Plan

- Collection of two air samples at each of the 5 locations for VOC, Lead, and Asphalt Fume.
- Continuous monitoring of VOC and Particulate Matter during sampling

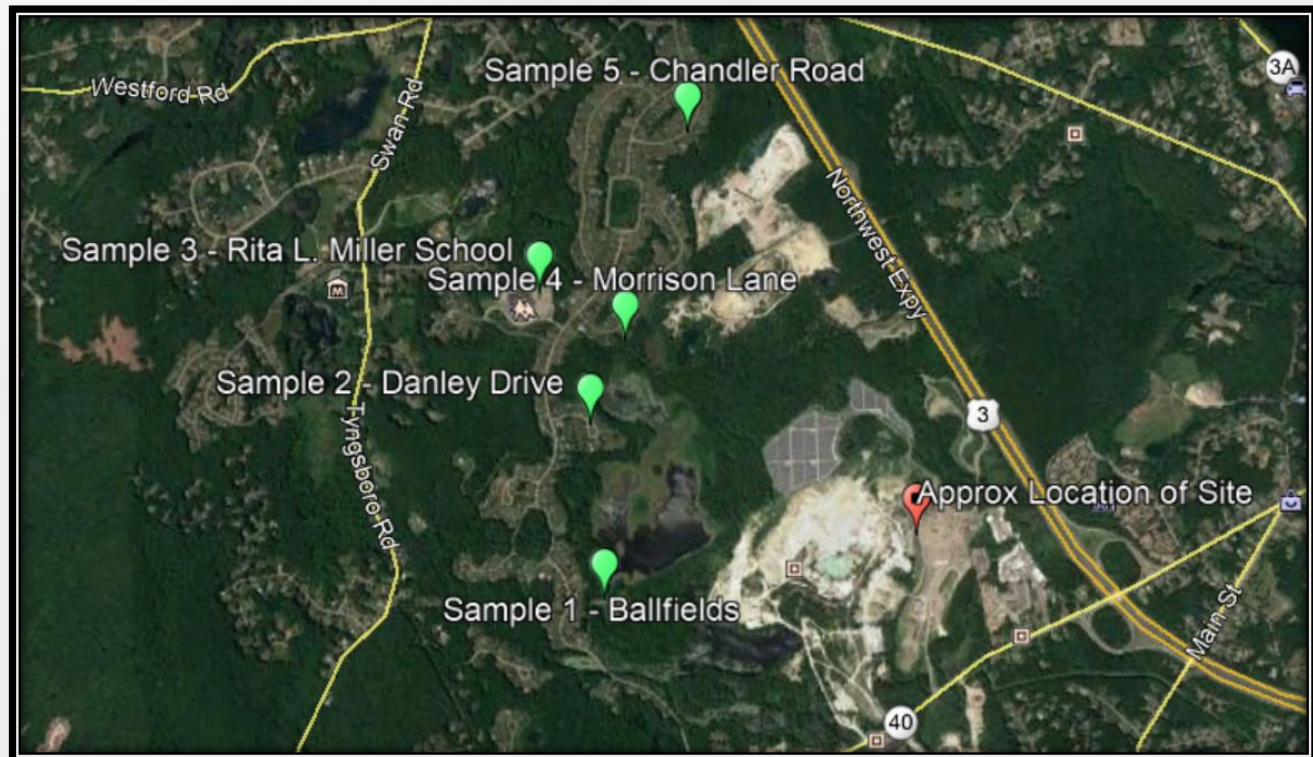
Equipment	Analyte	Monitoring Method
MiniRae PID	VOC	Continuous
Dustrak 8520	Particulate Matter	Continuous

Analyte	Number of Samples per Site	Laboratory Method
TO-15 (VOC)	2	EPA TO-15
Lead	2	mod. NIOSH 7303
Asphalt Fume	2	mod. NIOSH 5042



Sample Locations

- 5 locations intended to represent areas closest to the plant routinely occupied by Town of Westford residents.



Field Measurement Results

Sample Location	Sampling Round	Field Measurements					
		Dusttrak min.	Dusttrak max.	Dusttrak Avg.	PID min.	PID Max.	PID Avg.
		PM10 (mg/m3)			VOC (ppm)		
Greystone Field	Pre Construction	0.000	0.009	0.002	< 0.01	< 0.01	< 0.01
	Post Construction	0.003	0.210	0.017	< 0.01	0.10	0.10
Danley Drive	Pre Construction	0.004	0.012	0.007	0.10	0.20	0.12
	Post Construction	0.005	0.185	0.011	< 0.01	0.10	0.10
Morrison Lane	Pre Construction	0.001	0.010	0.005	< 0.01	0.20	0.10
	Post Construction	0.011	0.020	0.016	< 0.01	0.10	0.10
Chandler Road	Pre Construction	0.015	0.063	0.023	< 0.01	0.10	0.09
	Post Construction	0.005	0.028	0.012	< 0.01	0.10	0.10
Elementary School	Pre Construction	0.008	0.016	0.011	< 0.01	< 0.01	< 0.01
	Post Construction	0.007	0.055	0.014	< 0.01	0.10	0.10



- Pre Construction May 2019
- Post Construction September 2020

Sample Results

Volatile Organic Compound	Maximum Concentration Pre-Construction (ppbv)	Maximum Concentration Post-Construction (ppbv)	Potential Sources of VOC emission
Freon-12	0.53	0.40	Common refrigerant - automobile, residential, commercial and industrial cooling and refrigeration equipment
Chloromethane	0.56	0.42	Formerly a common refrigerant - Industrial uses include chemical synthesis, as a propellant, and as a blowing agent
n-Butane	0.33	0.55	Common organic gas - Liquefied petroleum gas, household products, byproduct of natural gas combustion
Ethanol	5.5	ND	Common simple alcohol – gasoline, household products
Acetonitrile	1.8	0.9	Common solvent - auto exhaust and nail polishes and removers
Acetone	3.6	3.5	Common solvent - household products, nail polishes and removers
Freon-11	0.26	0.20	Common refrigerant - automobile, residential, commercial, and industrial cooling and refrigeration equipment
Isopropyl Alcohol	1.0	0.5	Common alcohol – industrial solvent, household products

ND = Not Detected above laboratory detection limits

- Pre Construction May 2019
- Post Construction September 2020



Sample Results Continued

Volatile Organic Compound	Maximum Concentration Pre-Construction (ppbv)	Maximum Concentration Post-Construction (ppbv)	Potential Sources of VOC emission
Pentane	1.3	0.26	Common organic compound - propellant and blowing agent, solvent for household products (e.g., pesticide), byproduct of natural gas combustion
Vinyl Acetate	ND	0.17	Organic compound – adhesives, glues, lacquers, printing inks, paints, textile coatings, paper coatings.
Methyl Ethyl Ketone	0.26	0.27	Common ketone - gasoline, household products
Ethyl Acetate	0.73	0.88	Common organic, solvent - animal waste, plant volatiles, perfumes, nail polish and removers, food products, fruit
Toluene	0.36	0.19	Common solvent – household products, adhesives, paints/varnishes, auto exhaust, gasoline
m & p-Xylene	ND	0.56	Common solvent – household products, adhesives, paints/varnishes, auto exhaust, gasoline
o-Xylene	ND	0.21	Common solvent – household products, adhesives, paints/varnishes, auto exhaust, gasoline
Cumene	ND	0.58	Common organic compound – gasoline, diesel, aviation fuel, cigarette smoke, solvents

ND = Not Detected above laboratory detection limits

- Pre Construction May 2019
- Post Construction September 2020



Note: Asphalt fume, lead and all other VOCs were not detected above laboratory detection limits during either sampling round.

Any Questions?

Kenneth D. Boivin, CHMM

Principal

GZA | 5 Commerce Park North, Suite 201 | Bedford, New Hampshire 03110

o: 603.232.8719 | c: 603.566.9784 | kenneth.boivin@gza.com | www.gza.com

Samuel P. Despins, PE, CHMM

Project Manager

GZA | 5 Commerce Park Drive North, Suite 201 | Bedford, NH 03110

o: 603.232.8721 | c: 603.767.4318 | samuel.despins@gza.com | www.gza.com

